

REMARKS

Claim 1 has been amended to recite "two crossed conductors." Support for this amendment can be found, for example, on page 7, lines 1-12. Independent claims 56, 57, 90, 96, and 98 have been similarly amended.

Independent claims 56 and 57 have also been amended to recite that at least one of the conductors is produced by a process comprising forming the conductor, and transporting the conductor onto a surface. Support for these amendments can be found in the specification, for example, on page 13, lines 17-18. Dependent claims 114-117, which depend from independent claims 1, 90, 96, and 98, respectfully, similarly recite that at least one of the conductors is produced by a process comprising forming the conductor, and transporting the conductor onto a surface.

Dependent claims 3, 5, 7-10, 13, 14, 16-18, 20-23, 58, 91, 94, 95, 97, 99, 100, 107, and 110-112 have also been amended to provide proper antecedent basis. Claims 105-106 and 113 have been canceled without prejudice. No new matter has been added.

Claims 1, 3, 5, 7-10, 13, 14, 16-18, 20-23, 56-59, 90-104, and 107-117 are now pending for examination.

Rejections under 35 U.S.C. §102(b)

Claims 56-58 have been rejected under 35 U.S.C. §102(b) as being anticipated by Melzner, et al, U.S. Patent No. 5,774,414 ("Melzner"). These claims are distinguished from Melzner by, at least, the following.

It is not seen where in Melzner is there a disclosure or a suggestion of an article that includes a conductor produced by a process comprising forming the conductor, and transporting the conductor onto a surface, as is recited in claim 56, as amended. To the contrary, in Melzner, electrically conductive diaphragm layer 3 is formed by applying a layer of material over the entire surface of insulator 2, and then the electrically conductive diaphragm layer is formed in place by lithography and etching (col. 10, lines 10-23). Accordingly, it is believed that independent claims 56 and 57 and dependent claim 58, which depends from claim 57, are patentable in view of Melzner, and it is thus respectfully requested that the rejection of these claims be withdrawn.

Rejections under 35 U.S.C. §103(a)

Claims 1, 3, 5, 7-10, 13, 14, 16-18, 20-23, 59, and 90-113 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Melzner in view of Brandes, et al, U.S. Patent No. 6,445,006 ("Brandes"). The Patent Office apparently suggests substituting a nanotube of Brandes for an element of the memory device of Melzner.

It is not clear that one of ordinary skill in the art would be motivated to combine Melzner and Brandes in the manner that is suggested by the Patent Office, or that a reasonable expectation of success in making such a combination would exist.

In Melzner, the electrically conductive diaphragm includes a series of generally concave circular shapes (see Fig. 2B, top view), along a conductive track, which "enlargements" can be in an upwardly facing direction (Fig. 2E, dotted lines), or in a downwardly facing direction (Fig. 2E, solid lines). When in a upwardly facing direction, the electrically conductive diaphragm contacts a "sharp point" (10 in Fig. 2E) that extends from a conductive track. It is not clear where in the prior art of record there is any indication of which of these structures could be replaced with a nanotube in order to yield a functional device, and Melzner provides no guidance or direction as to making the proposed modification. While Melzner is directed to a memory device (e.g., the title), Brandes nowhere discloses or suggests a memory device. Rather, Brandes discloses the use of carbon nanotubes as fibers that are used to electrically interconnect two or more regions on a substrate (column 1, lines 57-52), or as sensors (column 1, lines 52-63). Additionally, Melzner does not describe or suggest that a "purely mechanical bistable" diaphragm is replaceable by a carbon nanotube. Accordingly, it is not clear how one of ordinary skill in the art would be able to combine Melzner with Brandes to produce a functional device.

Even if motivated for the substitution suggested by the Patent Office existed in the prior art, it is not seen how the prior art presents a reasonable expectation of success in using a nanotube (Brandes) in place of the electrically conductive diaphragm of Melzner. If this rejection is maintained, then it is respectfully requested that the Examiner point out where the prior art provides this expectation.

The Patent Office has not pointed to a disclosure or suggestion in either Melzner or Brandes that would lead one of ordinary skill in the art to combine these references. Instead, the Patent Office merely states, without any support, that the

motivation to combine Melzner and Brandes is "to capitalize on the semiconducting properties of carbon nanotubes." However, it is believed that more than a vague desire to "capitalize" on a property of a material is required in order to show a rationale for combining references in different fields of art, and that an objective teaching, suggestion, or motivation must be demonstrated, for example, in a prior art reference, that would enable one of ordinary skill in the art to make the combination of Melzner and Brandes, as is suggested in the Office Action.

Accordingly, for at least these reasons, it is respectfully requested that the rejection of independent claims 1, 90, 96, and 98, as amended, be withdrawn. The remaining claims depend, directly or indirectly, from these claims, and are believed to be allowable for at least these reasons. Withdraw of the rejection of these claims is also respectfully requested.

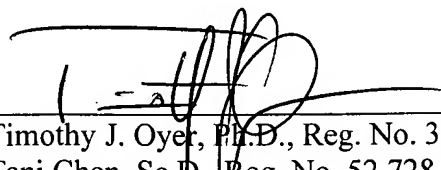
CONCLUSION

In view of the foregoing, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this response, that the application is not in condition for allowance, the Examiner is requested to call the undersigned at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

By:


Timothy J. Oyer, Ph.D., Reg. No. 36,628
Tani Chen, Sc.D., Reg. No. 52,728
WOLF, GREENFIELD & SACKS, P.C.
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
Telephone: (617) 646-8000